

Application No.: 10/538,923**Docket No.: 4590-421****Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (previously presented): A spin-valve transistor comprising:
an emitter,
a base,
and a collector, wherein

the emitter being made of a semiconductor material, the base comprising three successive metal layers, the first layer and the third layer being ferromagnetic, the second layer not being ferromagnetic, the interface between the emitter and the layers of the base forming a Schottky diode, wherein the collector is metallic and separated from the base by a thin insulating layer of approximately a few nanometers, said layer forming a tunnel-effect barrier between the base and said collector.

2. (previously presented): The spin-valve transistor as claimed in claim 1, wherein the insulating layer presents a lower-level potential barrier than the potential barrier of the Schottky diode existing between the emitter and the base.

3. (previously presented): The spin-valve transistor as claimed in claim 2, wherein the insulating layer is made of tantalum oxide or of zinc sulfide or of zirconium oxide or of a rare earth oxide such as yttrium oxide.

4. (previously presented): The spin-valve transistor as claimed in claim 1, wherein the insulating layer has a thickness of approximately between 1 and 4 nanometers.

5. (previously presented): The spin-valve transistor as claimed in claim 1, wherein the

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emitter comprises at least one layer of semiconductor material and the collector at least a first layer of metallic material.

6. (previously presented): The spin-valve transistor as claimed in claim 4, wherein the layer of semiconductor material of the emitter comprises at least a second layer of metallic material.

7. (currently amended): The spin-valve transistor as claimed in claim 4 wherein each electrical connection means is connected to the emitter base and collector layers and are placed on top [[implanted]] on the level of the first layer of metallic material, on the level of the second layer of metallic material and of any one of the layers of the base, said connection means being used to apply external voltages and currents to the transistor.

8. (currently amended): The spin-valve transistor as claimed in claim 1, wherein the electrical voltage applied between the emitter and the base via the connection means and is greater than the potential barrier of the insulating layer, wherein a collector current is the sum and a tunnel current between the base and the collector means and the ballistic current from the emitter and the collector current has sufficient energy to pass through the base and the Schottky diode without relaxing.

9. (currently amended): The spin-valve transistor as claimed in claim 5, wherein each electrical connection means is connected to the emitter base and collector layers and are placed on top [[implanted]] on the level of the first layer of metallic material, on the level of the second layer of metallic material and of any one of the layers of the base, said connection means being used to apply external voltages and currents to the transistor.